



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2016-9553; Directorate Identifier 2016-NE-29-AD; Amendment 39-18904; AD 2017-11-05]**

**RIN 2120-AA64**

**Airworthiness Directives; Rolls-Royce Corporation Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Rolls-Royce Corporation (RRC) AE 3007C and 3007C1 turbofan engines. This AD was prompted by analysis and by cracks found in the high-pressure turbine (HPT) wheel during an inspection. This AD requires replacement of the affected HPT wheels at new, lower life limits. We are issuing this AD to correct the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Rolls-Royce Corporation, 450 South Meridian Street, Mail Code NB-01-06, Indianapolis, IN 46225; phone: 317-230-3774; email: [indy.pubs.services@rolls-royce.com](mailto:indy.pubs.services@rolls-royce.com); Internet: [www.rolls-royce.com](http://www.rolls-royce.com). You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of

this material at the FAA, call 781-238-7125. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9553.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9553; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Kyri Zaroyiannis, Aerospace Engineer, Chicago Aircraft Certification Office, Small Airplane Directorate, FAA, 2300 E. Devon Ave., Des Plaines, IL 60018; phone: 847-294-7836; fax: 847-294-7834; email: [kyri.zaroyiannis@faa.gov](mailto:kyri.zaroyiannis@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain RRC AE 3007C and 3007C1 model turbofan engines. The NPRM published in the Federal Register on February 22, 2017 (82 FR 11327) (“the NPRM”). The NPRM was prompted by analysis and by cracks found in the HPT wheel during an inspection. The NPRM proposed to require replacement of the affected HPT wheels at new, lower life limits. We are issuing this AD to prevent uncontained failure of the HPT wheels, damage to the engine, and damage to the airplane.

**Comments**

We gave the public the opportunity to participate in developing this AD. We have considered the comment received. An individual commenter supported the NPRM.

**Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD as proposed.

**Related Service Information under 1 CFR part 51**

We reviewed RRC Alert Service Bulletin (ASB) AE 3007C-A-72-318, Revision 2, dated September 23, 2016. The ASB provides updated life limits for the affected HPT wheels. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

**Costs of Compliance**

We estimate that this AD affects 307 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

### Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replacement of HPT wheel (Part Number (P/N) 23062373, 23065891, or 23070664) at reduced life	0 work-hours x \$85 per hour = \$0	\$39,171 (pro-rated cost of part)	\$39,171	\$3,838,758
Replacement of HPT wheel (P/N 23063462, 23065892, 23069116, 23069592, or 23074643) at reduced life	0 work-hours x \$85 per hour = \$0	\$21,911 (pro-rated cost of part)	\$21,911	\$4,579,399

### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

## **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2017-11-05 **Roll-Royce Corporation (Type Certificate previously held by Allison Engine Company)**: Amendment 39-18904; Docket No. FAA-2016-9553; Directorate Identifier 2016-NE-29-AD.

**(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

(1) This AD applies to Rolls-Royce Corporation (RRC) AE 3007C and 3007C1 turbofan engines with 1<sup>st</sup> stage high-pressure turbine (HPT) wheels, part number (P/N) 23062373, 23065891, or 23070664; or with 2<sup>nd</sup> stage HPT wheels, P/N 23063462, 23065892, 23069116, 23069592 (except those serial numbers (S/Ns) noted in paragraph (c)(2) of this AD), or 23074643, installed.

(2) This AD does not apply to RRC AE 3007C and 3007C1 turbofan engines with 2<sup>nd</sup> stage HPT wheels, P/N 23069592, with S/Ns listed in Table 6 of RRC Alert Service Bulletin (ASB) AE 3007C-A-72-318, Revision 2, dated September 23, 2016, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7250, Turbine/turboprop Engine, Turbine Section.

**(e) Unsafe Condition**

This AD was prompted by analysis and by cracks found in the HPT wheel during an inspection. We are issuing this AD to prevent uncontained failure of the HPT wheels, damage to the engine, and damage to the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

(1) For all RRC AE 3007C or C1 engines with an installed 1<sup>st</sup> stage HPT wheel, P/N 23062373, 23065891, or 23070664, or 2<sup>nd</sup> stage HPT wheel, P/N 23063462, 23065892, 23069116, 23069592 (except those S/Ns excluded by paragraph (c)(2) of this AD) or 23074643, after the effective date of this AD, remove the affected wheels before exceeding the new life limits identified in paragraph C., Table 1 of RRC ASB AE 3007C-A-72-318, Revision 2, dated September 23, 2016.

(2) After the effective date of this AD, do not return to service any engine with an HPT turbine wheel, with an affected P/N and an S/N, with a wheel life that exceeds the new life limits identified in paragraph C., Table 1 of RRC ASB AE 3007C-A-72-318, Revision 2, dated September 23, 2016.

**(g) Alternative Methods of Compliance (AMOCs)**

The Manager, Chicago Aircraft Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(h) Related Information**

For more information about this AD, contact Kyri Zaroyiannis, Aerospace Engineer, Chicago Aircraft Certification Office, Small Airplane Directorate, FAA, 2300 E. Devon Ave., Des Plaines, IL 60018; phone: 847-294-7836; fax: 847-294-7834; email: kyri.zaroyiannis@faa.gov.

**(i) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Rolls-Royce Corporation (RRC) Alert Service Bulletin AE 3007C-A-72-318, Revision 2, dated September 23, 2016.

(ii) Reserved.

(3) For RRC service information identified in this AD, contact Rolls-Royce Corporation, 450 South Meridian Street, Mail Code NB-01-06, Indianapolis, IN 46225; phone: 317-230-3774; email: [indy.pubs.services@rolls-royce.com](mailto:indy.pubs.services@rolls-royce.com); Internet: [www.rolls-royce.com](http://www.rolls-royce.com).

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may view this service information at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on May 17, 2017.

Robert J. Ganley,  
Acting Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

[FR Doc. 2017-12077 Filed: 6/12/2017 8:45 am; Publication Date: 6/13/2017]